

WHAT IS CLAIMED IS:

5 1. A system for detecting, monitoring and reporting human physiological information, comprising:

a sensor device adapted to be placed in contact with an individual's upper arm, said sensor device including at least one of an accelerometer, a GSR sensor and a heat flux sensor, said sensor device being adapted to generate at least one of data indicative of at least one of activity, galvanic skin response, and heat flow of said individual and derived data from at least a portion of said data indicative of at least one of activity, galvanic skin response and heat flow;

a central monitoring unit remote from said sensor device adapted for the generation of analytical status data from at least a portion of at least one of said data indicative of at least one of activity, galvanic skin response and heat flow, said derived data and said analytical status data, said central monitoring unit including a data storage device for retrievably storing at least one of said data indicative of at least one of activity, galvanic skin response and heat flow, said derived data and said analytical status data;

data transfer means for establishing at least temporary electronic communication between said sensor device and said central monitoring unit; and

means for transmitting at least one of said data indicative of at least one of activity, galvanic skin response and heat flow, said derived data and said analytical status data to a recipient.

2. A system according to claim 1, wherein said sensor device further comprises a processor adapted to generate said derived data.

14/3. A system according to claim 1, wherein said sensor device further comprises means for providing at least one of tactile, audible and visual information to said individual.

15/4. A system according to claim 3, wherein said information is based on said derived data.

16/5. A system according to claim 1, wherein said sensor device further comprises at least one of a vibrating motor, a ringer and one or more LEDs for providing information to said individual.

17/6. A system according to claim 3, wherein said information is based on said derived data.

18/7. A system according to claim 3, wherein said information comprises at least one of a remaining memory capacity and a remaining battery level.

5/8. A system according to claim 1, wherein said central monitoring unit is adapted to generate derived data from at least a portion of said data indicative at least one of activity, galvanic skin response and heat flow.

9. A system according to claim 1, wherein said data indicative of at least one of activity, galvanic skin response and heat flow comprises a summary over a period of time.

10. A system according to claim 1, wherein said sensor device further comprises a memory for storing said data indicative of at least one of activity, galvanic skin response and heat flow and said derived data.

5 11. A system according to claim 1, wherein said central monitoring unit is adapted to generate one or more web pages containing at least one of said data indicative of at least one of activity, galvanic skin response and heat flow, said derived data, and said analytical status data, and wherein said means for transmitting makes said web pages accessible by said recipient over the Internet.

12. A system according to claim 8, wherein said central monitoring unit is adapted to generate one or more web pages containing at least one of said data indicative of at least one of activity, galvanic skin response and heat flow, said derived data, and said analytical status data, and wherein said means for transmitting makes said web pages accessible by said recipient over the Internet.

13. A system according to claim 1, wherein said means for transmitting transmits said at least one of said data indicative of at least one of activity, galvanic skin response and heat flow, said derived data, and said analytical status data to said recipient over an electronic
20 network.

14. A system according to claim 1, wherein said means for transmitting transmits said at least one of said data indicative of at least one of activity, galvanic skin response and heat flow, said derived data, and said analytical status data to said recipient in physical form.

28

5 15. A system according to claim 1, wherein said recipient comprises said individual.

29

16. A system according to claim 1, wherein said recipient comprises a third party authorized by said individual.

30

17. A system according to claim 1, further comprising means for obtaining life activities data of said individual, said life activities data being retrievably stored in said data storage device, wherein said analytical status data is also generated from selected portions of said life activities data.

31

18. A system according to claim 17, said means for obtaining comprising means for enabling said individual to input said life activities data and transmit said life activities data to said central monitoring unit.

30

32

19. A system according to claim 17, said means for obtaining comprising an input device for enabling said individual to input said life activities data, said input device being adapted to transmit said life activities data to said central monitoring unit.

33

33

20. A system according to claim 1, wherein said sensor device generates data indicative of one or more contextual parameters associated with said individual, and wherein said analytical status data is also generated from selected portions of said data indicative of one or more contextual parameters.

5

34

21. A system according to claim 1, further comprising means for downloading data from said central monitoring unit to said sensor device.

3

22. A system according to claim 2, said sensor device comprising a computer housing for containing said processor and a flexible wing body having first and second wings adapted to wrap around a portion of said upper arm.

35

23. A system according to claim 22, wherein said computer housing has a skin contacting surface and wherein at least one of said GSR sensor and said heat flux sensor is affixed to said skin contacting surface.

36

24.

A system according to claim 22, wherein said flexible wing body has a skin contacting surface and wherein at least one of said GSR sensor and said heat flux sensor is affixed to said skin contacting surface.

3

20

37

25. A system according to claim 22, further comprising means for removably affixing said sensor device to said upper arm.

3

1 26. A system according to claim 22, wherein each of said wings has a hole, said sensor device further comprising an elastic strap inserted through said holes for removably affixing said sensor device to said upper arm.

5 27. A system according to claim 22, wherein said computer housing includes a button adapted to send a signal to said processor marking the time of an event.

9 28. A system according to claim 27, said button also adapted to send a signal to said processor requesting information relating to at least one of a remaining battery level and a remaining memory capacity.

13 29. A system according to claim 28, wherein said information is output to said individual.

17 30. A system according to claim 29, wherein said information is output visually.

21 31. A system according to claim 30, wherein said computer housing also includes one or more LEDs, said LEDs displaying said information relating to said at least one of a remaining battery level and a remaining memory capacity.

25 32. A system according to claim 1, wherein said sensor device further comprises a wireless receiver for receiving data from a wireless device worn by or located near said individual.

13 33. A system according to claim 30, wherein said wireless device comprises a heart rate monitor, said data received from said wireless device comprises data indicative of heart rate of said individual, and said derived data and said analytical status data are also generated from at least a portion of said data indicative of heart rate.

5

34 34. A system according to claim 1, said sensor device further comprising a rechargeable battery, said sensor device being adapted to be placed in a battery recharger unit for recharging said rechargeable battery.

35 35. A system according to claim 34, said sensor device further comprising a first wireless transceiver, said battery recharger unit further comprising a second wireless transceiver, said first and second wireless transceivers being in communication with one another and forming at least a part of said data transfer means.

36 36. A system according to claim 1, said sensor device further comprising a wireless transceiver forming at least a part of said data transfer means.

37 37. A system according to claim 1, wherein said accelerometer has at least two axes.

20 38. A system according to claim 37, wherein said accelerometer is mounted in said sensor device such that said axes form an angle of substantially 45 degrees with a longitudinal axis of an arm of said individual when said sensor device is worn on said arm.

41/40 39. A system according to claim 1, wherein said derived data comprises at least one of calories burned, sleep onset and wake, stress level and relaxation level.

44/43 40. A system according to claim 1, wherein said derived data comprises calories burned and is based on at least one of said data indicative of activity and said data indicative of heat flow.

44/43 41. A system according to claim 40, wherein said derived data is also based on said data indicative of galvanic skin response.

10 21/19 42. A system according to claim 8, wherein said derived data comprises at least one of calories burned, sleep onset and wake, stress level and relaxation

15 43. A system according to claim 8, wherein said derived data comprises calories burned and is based on at least one of said data indicative of activity and said data indicative of heat flow.

20 44. A system according to claim 43, wherein said derived data is also based on said data indicative of galvanic skin response.

45. A system for monitoring the degree to which an individual has followed a suggested routine, comprising:

5 a sensor device adapted to be placed in contact with said individual's upper arm,
said sensor device including at least one of an accelerometer, a GSR sensor and a heat
flux sensor, said sensor device being adapted to generate at least one of data indicative of
at least one of activity, galvanic skin response, and heat flow of said individual and
derived data from at least a portion of said data indicative of at least one of activity,
galvanic skin response and heat flow;

means for transmitting said at least one of said data indicative of at least one of
activity, galvanic skin response and heat flow and said derived data from said sensor
device to a central monitoring unit remote from said sensor device; and

10 means for providing life activities data of said individual to said central
monitoring unit;

15 wherein said central monitoring unit is adapted to generate and provide feedback to a recipient
relating to the degree to which said individual has followed said suggested routine, said feedback
being generated from at least a portion of at least one of said data indicative of at least one of
activity, galvanic skin response and heat flow, said derived data and said life activities data.

46. A system according to claim 45, wherein said sensor device further comprises a
processor adapted to generate said derived data.

20 47. A system according to claim 45, said central monitoring unit including a data
storage device for retrievably storing said data indicative of at least one of activity, galvanic skin
response and heat flow, said derived data and said life activities data.

48. A system according to claim 45, wherein said central monitoring unit is adapted to generate derived data from at least a portion of said data indicative of at least one of activity, galvanic skin response and heat flow.

5 49. A system according to claim 45, wherein said routine comprises a plurality of categories.

50. A system according to claim 49, wherein said feedback is generated and provided with respect to each of said categories.

51. A system according to claim 50, wherein said categories include two or more of nutrition, activity level, mind centering, sleep, and daily activities.

52. A system according to claim 50, wherein at least a portion of said feedback is in graphical form.

53. A system according to claim 52, wherein said central monitoring unit is adapted to generate one or more web pages containing said feedback, said web pages being accessible by said recipient over the Internet.

54. A system according to claim 45, wherein said central monitoring unit is adapted to generate one or more web pages containing said feedback, said web pages being accessible by said recipient over the Internet.

55. A system according to claim 48 wherein said central monitoring unit is adapted to generate one or more web pages containing said feedback, said web pages being accessible by said recipient over the Internet.

5

56. A system according to claim 45, further comprising means for transmitting said feedback to said recipient over an electronic network.

57. A system according to claim 48, further comprising means for transmitting said feedback to said recipient over an electronic network.

58. A system according to claim 52, further comprising means for transmitting said feedback to said recipient over an electronic network.

59. A system according to claim 45, further comprising means for transmitting said feedback to said recipient in physical form.

60. A system according to claim 48 further comprising means for transmitting said feedback to said recipient in physical form.

61. A system according to claim 52, further comprising means for transmitting said feedback to said recipient in physical form.

62. A system according to claim 59, wherein said central monitoring unit is adapted to generate one or more web pages for each of said categories, said one or more web pages containing detailed information based on at least a portion of at least one of said data indicative of at least one of activity, galvanic skin response and heat flow, said derived data, and said life activities data.

63. A system according to claim 45, said means for providing comprising means for enabling said individual to input said life activities data and transmit said life activities data to said central monitoring unit.

64. A system according to claim 45, said means for providing comprising an input device for enabling said individual to input said life activities data, said input device being adapted to transmit said life activities data to said central monitoring unit.

65. A system according to claim 45, wherein said recipient is said individual.

66. A system according to claim 45, wherein said recipient is a third party authorized by said individual.

67. A system according to claim 46, said sensor device comprising a computer housing for containing said processor and a flexible wing body having first and second wings adapted to wrap around a portion of said upper arm.

68. A system according to claim 67, wherein said computer housing has a skin contacting surface and wherein at least one of said GSR sensor and said heat flux sensor is affixed to said skin contacting surface.

5 69. A system according to claim 67, wherein said flexible wing body has a skin contacting surface and wherein at least one of said GSR sensor and said heat flux sensor is affixed to said skin contacting surface.

10 70. A system according to claim 67, further comprising means for removably affixing said sensor device to said upper arm.

15 71. A system according to claim 67, wherein each of said wings has a hole, said sensor device further comprising an elastic strap inserted through said holes.

20 72. A system according to claim 67, wherein said computer housing includes a button adapted to send a signal to said processor marking the time of an event.

73. A system according to claim 72, said button also being adapted to send a signal to said processor requesting information relating to at least one of a remaining battery level and a remaining memory capacity.

74. A system according to claim 73, wherein said information is output to said individual.

75. A system according to claim 74, wherein said information is output visually.

76. A system according to claim 75, wherein said computer housing also includes one or more LEDs, said LEDs displaying said information relating to at least one of a remaining
5 battery level and a remaining memory capacity.

77. A system according to claim 45, wherein said sensor device further comprises a wireless receiver for receiving data from a wireless device worn by or located near said individual.

78. A system according to claim 77, wherein said wireless device comprises a heart rate monitor, said data received from said wireless device comprises data indicative of heart rate of said individual, and said derived data and said feedback are also generated from at least a portion of said data indicative of heart rate.

79. A system according to claim 45, said sensor device further comprising a rechargeable battery, said sensor device being adapted to be placed in a battery recharger unit for recharging said rechargeable battery.

80. A system according to claim 79, said sensor device further comprising a first wireless transceiver, said battery recharger unit further comprising a second wireless transceiver, said first and second wireless transceivers being in communication with one another and forming at least a part of said transmitting means.

81. A system according to claim 45, said sensor device further comprising a wireless transceiver forming at least a part of said transmitting means.

82. A system according to claim 45, wherein said accelerometer has at least two axes.

83. A system according to claim 82, wherein said accelerometer is mounted in said sensor device such that said axes form an angle of substantially 45 degrees with a longitudinal axis of an arm of said individual when said sensor device is worn on said arm.

84. A system according to claim 45, wherein said derived data comprises at least one of calories burned, sleep onset and wake, stress level and relaxation level.

85. A system according to claim 45, wherein said derived data comprises calories burned and is based on at least one of said data indicative of activity and said data indicative of heat flow.

86. A system according to claim 85, wherein said derived data is also based on said data indicative of galvanic skin response.

87. A system according to claim 48 wherein said derived data comprises at least one of calories burned, sleep onset and wake, stress level and relaxation level.

88. A system according to claim 48, wherein said derived data comprises calories burned and is based on at least one of said data indicative of activity and said data indicative of heat flow.

5 89. A system according to claim 88, wherein said derived data is also based on said data indicative of galvanic skin response.

90. A system according to claim 88, wherein said sensor device further comprises means for providing at least one of tactile, audible and visual information to said individual.

91. A system according to claim 90, wherein said information is based on said derived data.

92. A system according to claim 45, wherein said sensor device further comprises at least one of a vibrating motor, a ringer and one or more LEDs for providing information to said individual.

93. A system according to claim 92, wherein said information is based on said derived data.

94. A system according to claim 92, wherein said information comprises at least one of a remaining memory capacity and a remaining battery level and is provided by said LEDs.

Sub B2

95.
B2

A sensor device adapted to be placed in contact with an individual's upper arm and generate data indicative of at least one of activity, galvanic skin response and heat flow of said individual, comprising:

at least one of an accelerometer, a GSR sensor and a heat flux sensor;

5

a processor coupled to said at least one of an accelerometer, a GSR sensor and a heat flow sensor;

means for inputting and outputting data from said sensor device;

a computer housing for containing said processor; and

a flexible wing body having first and second wings, said first and second wings

being adapted to wrap around a portion of said upper arm.

73

47

96. A sensor device according to claim 95, said inputting and outputting means comprising a wireless transceiver.

97. A sensor device according to claim 95, wherein said processor is adapted to generate derived data from said data indicative of at least one of activity, galvanic skin response and heat flow.

Sub B3

98.
B3

20

A sensor device according to claim 97, wherein said derived data comprises at least one of calories burned, sleep onset and wake, stress level and relaxation level.

Sub B3
cont.

99. A sensor device according to claim 97, wherein said derived data comprises calories burned and is based on at least one of said data indicative of activity and said data indicative of heat flow.

5 100. A sensor device according to claim 99, wherein said derived data is also based on said data indicative of galvanic skin response.

Sub B4

101. A sensor device according to claim 97, further comprising means for providing at least one of tactile, audible and visual information to said individual.

52

102. A sensor device according to claim 101, wherein said information is based on said derived data.

Sub B5

103. A sensor device according to claim 97, further comprising at least one of a vibrating motor, a ringer and one or more LEDs for providing information to said individual.

53

104. A sensor device according to claim 103, wherein said information is based on said derived data.

20 105. A sensor device according to claim 95, further comprising at least one of a vibrating motor, a ringer and one or more LEDs for providing information to said individual.

Sub B6
106. A sensor device according to claim 105, wherein said information comprises at least one of a remaining memory capacity and a remaining battery level and is provided by said LEDs.

5 107. A sensor device according to claim 95, further comprising means for providing at least one of tactile, audible and visual information to said individual.

Sub B7
108. A sensor device according to claim 107, wherein said information comprises at least one of a remaining memory capacity and a remaining battery level.

109. A sensor device according to claim 95, wherein said accelerometer has at least two axes.

110. A sensor device according to claim 109, wherein said accelerometer is mounted within said computer housing in such a manner that said axes form an angle of substantially 45 degrees with a longitudinal axis of said arm when said sensor device is worn on said arm.

111. A sensor device according to claim 95, wherein said computer housing has a skin contacting surface and wherein at least one of said GSR sensor and said heat flux sensor is affixed to said skin contacting surface.

60 112. A sensor device according to claim 95, wherein said flexible wing body has a skin contacting surface and wherein at least one of said GSR sensor and said heat flux sensor is affixed to said skin contacting surface.

61 113. A sensor device according to claim 95, further comprising means for removably affixing said sensor device to said upper arm.

62 114. A sensor device according to claim 95, wherein each of said wings has a hole, said sensor device further comprising an elastic strap inserted through said holes for removably affixing said sensor device to said upper arm.

63 115. A sensor device according to claim 95, wherein said computer housing includes a button adapted to send a signal to said processor marking the time of an event.

64 116. A sensor device according to claim 115, said button also being adapted to send a signal to said processor requesting information relating to at least one of a remaining battery level and a remaining memory capacity.

65 117. A sensor device according to claim 116, wherein said information is output to said individual.

66 118. A sensor device according to claim 117, wherein said information is output visually.

119. A sensor device according to claim 118, wherein said computer housing also includes one or more LEDs, said LEDs displaying said information relating to at least one of a remaining battery level and a remaining memory capacity.

120. A sensor device according to claim 95, further comprising a wireless receiver for receiving data from a wireless device worn by or located near said individual.

Sub 88
121. A sensor device according to claim 97, further comprising a wireless receiver for receiving data from a wireless device worn by or located near said individual, wherein said wireless device comprises a heart rate monitor, said data received from said wireless device comprises data indicative of heart rate of said individual, and said derived data is also generated from said data indicative of heart rate.

122. A sensor device according to claim 95, further comprising a rechargeable battery, said sensor device being adapted to be placed in a battery recharger unit for recharging said rechargeable battery.

123. A sensor device according to claim 122, wherein said inputting and outputting means comprises a first wireless transceiver, said battery recharger unit further comprising a second wireless transceiver, said first and second wireless transceivers being in communication with one another.